REMARKS

Reconsideration of the application and the claims is respectfully requested.

Claims 1-11, 13-28, 30-34, 36-46, and 48-58 remain pending. Claims 1, 18, 36 and 56 are independent.

Claim Rejections – 35 U.S.C. §103

The Office Action rejected claims 1-11, 13-17 and 57 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,643,671 to Milillo et al ("Milillo"), in view of U.S. Patent No. 6,253,295 to Beal et al. ("Beal"), in further view of U.S. Patent No. 6,189,079 ("Micka et al."). Claims 18-28, 30-33, 36-46, 48-51, 53-56 and 58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Milillo in view of Beal. Claims 17, 34 and 52 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Milillo in view of Beal and further in view of U.S. Patent No. 5,504,861 to Crockett et al. ("Crockett").

Applicant respectfully traverses the rejections. For example, the references do not disclose or suggest at least "a first point in time virtual copy."

The Examiner cites Milillo for allegedly disclosing that element. While Milillo discloses a copy of bitmap having the accumulated write commands received by the primary target volume from source volume, Milillo still does not disclose or suggest "a first point in time virtual copy." Rather, Milillo specifically discloses that its primary target volume also receives from source volume the data of the write commands from host (Milillo, column 8, lines 52-53).

On the other hand, "a first point in time virtual copy" claimed in independent claims of the present application performs a virtual copy by setting or updating the first bitmap "without copying the modified data to the second volume." Rather, a bitmap is set to indicate that data is to be modified on the first volume. Thus, at "a first point in time", the data is not copied, unlike Milillo that discloses that data of the write commands is copied to its primary target volume.

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For at least this reason, applicant believes the cited references do not disclose or suggest every element claimed in independent claims and their respective dependent claims by virtue of dependencies, and therefore those claims are unobvious over the cited references.

In addition, the references also do not disclose or suggest at least, "synchronizing the second volume with the third volume for the current database update by transmitting the modified data from either the first volume or the second volume depending on bit setting in the first bitmap, to the third volume as indicated by the one or more bits in the second bitmap" claimed in independent claim 1 and similarly claimed in independent claim 18, 36 and 56. That is, the references do not disclose or suggest to transmit the modified data from either the first volume or the second volume depending on a bit setting in the first bitmap. Thus, as claimed in independent claims, whether to perform a PPRC is indicated by the second bitmap, and where to copy the data from is indicated by the first bitmap. The Examiner cites Milillo's column 2, lines 43-67 and column 4, lines 47-60. While those passages of Milillo describe that data indicated by write commands (which are stored in the primary target volume) are migrated to the secondary volume, those passages do not disclose or suggest that depending on the bit setting in the "first bitmap" to determine from which volume to get the modified data.

The Examiner also improperly combines Milillo with Micka et al. to suggest that "transferring the first bitmap to a second bitmap at the primary site for indicating the modified data that is to be transmitted to a third volume, which is at the remote site, for the current database update, the transferring including at least inverting bits of the first bitmap to the second bitmap" step is obvious. Milillo's bitmaps are write commands. It is not clear how "write commands" of Milillo can be inverted. Furthermore, even if Milillo's write commands were to be somehow inverted, Milillo then would not function as intended, as Milillo appears to execute those write commands in order to generate an updated data file. Not only is it not clear how a "write command" would be inverted, but also what would be the result of executing an inverted "write command".

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For at least those additional reasons, independent claims 1, 18, 36 and 56, and their respective dependent claims are believed to be unobvious over the cited references.

With respect to the rejection of claims 17, 34 and 52 under 35 U.S.C. §103(a) over Milillo in view of Beal and further in view Crockett, because Crockett does not disclose or suggest what Milillo and Beal fail to disclose or suggest as discussed above, those claims are also not obvious for at least the same foregoing reasons.

This communication is believed to be fully responsive to the Office Action and every effort has been made to place the application in condition for allowance. A favorable Office Action is hereby earnestly solicited. If the Examiner believes a telephone conference might expedite prosecution of this case, it is respectfully requested that the Examiner call applicant's attorney at (516) 742-4343.

Respectfully submitted,

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